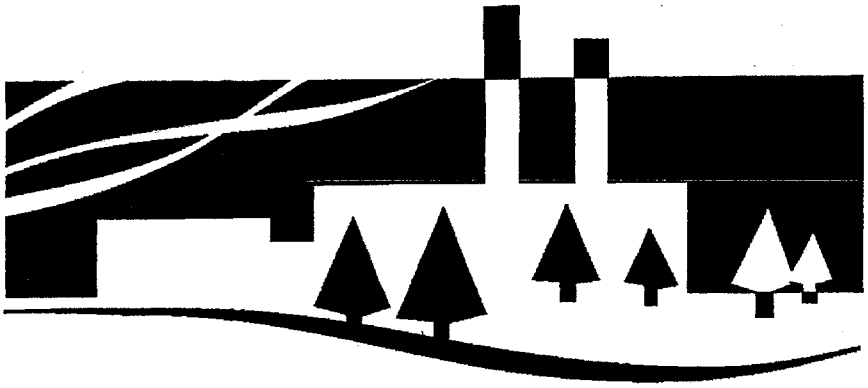

Kentucky Pollution Prevention Center

THE FUN FACTORY

an interactive exercise for waste reduction training

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THE FUN FACTORY
TRAINING IN WASTE REDUCTION USING A MOCK INDUSTRIAL PROCESS

INTRODUCTION

The following exercise was developed by the Minnesota Technical Assistance Program and the Waste Reduction Institute for Training and Application Research, Inc. (WRITAR) in order to provide training to regulators who might have opportunity to promote pollution prevention to the regulated community. In the process of testing the exercise, MNTAP found that this sort of training might have much wider application, and so this example is provided today so that others can have access to something that has developed into an excellent training tool.

The goal of this training exercise, which uses a mock industrial process to illustrate waste reduction principles, is to give participants experience in recognizing waste reduction opportunities. This includes recognition not only of options, which might reduce waste generation, but also some sense of the difficulties encountered in the implementation phase. These difficulties arise because of the natural human resistance to change pressures of day-to-day operation of a business, and the difficulties inherent in selecting and justifying process modifications. All of these are represented in the training exercise.

But when complete, the exercise should leave participants with a feeling of empowerment. Discovery and implementation of waste reduction opportunities relies heavily on communication, as well as technical skills. What participants discover is that even in a completely unfamiliar situation, they can make waste reduction happen by listening to the right people and asking good questions.

This exercise has been used repeatedly by the Kentucky Pollution Prevention Center (KPPC) to assist industries, regulatory agencies, and those interested in the reduction of industrial wastes. This exercise provides real world manufacturing pressures, problems, and conflicts of interests. Although it is entitled "Fun Factory" – and it's hard to get too serious about Play-Doh - these are serious issues and concerns for every manufacturer.

Disclaimer: Although some colors are described as being hazardous materials and wastes, the props are in no way, shape, or form hazardous. This is a "mock" industrial process demonstration for training purposes.

REQUIRED MATERIALS

- Tables large enough for the sheds, the machinery, and all employees to assemble
- Cans of one color of Play-Doh
- Cans of a second color of Play-Doh
- Cans of any third color of Play-Doh
- Fun Factory Machines, with dies and knives
- Waste Storage Shed (sheet of paper divided into sections – see back page)

(The quantity of materials needed may be determined by placing 4 to 6 participants at each Fun Factory set up.)

POSITIONS AND JOB DESCRIPTIONS

Plant Manager – Normally ignores the operation. Communicates customer orders to the Plant Engineer. Nods knowingly to all other inquiries. When in doubt, mumbles?

Plant Engineer – In charge of handling the drums, preparing the Play-Doh material for use in the machine, worker complaints, and company parties.

Storage Shed Manager – Inventory control over wastes – proper labeling, proper storage, and reports quantity of wastes to Plant Engineer (reports are generally 3-4 months behind production).

Line Operator – Extrudes the products as ordered, cleans up the machinery. Minimum wage (plus $0.10 per hour premium due to seniority) glad to have the job.

The positions below are OPTIONAL; depends on number of participants at each table.

Waste Handler – Assists the Line Operator by measuring the parts, performs cutting operation, and hands the waste to Storage Shed Manager. Minimum wage, glad to have any job.

Regulatory Compliance Coordinator – Monitors the entire operation for environmental, safety, and solid waste compliance. BS Chemistry, MS Environmental Engineering. CSP – Certified Safety Professional, CHWT – Certified Hazardous Waste Trainer, JCO – Jailable Corporate Officer.

COMPANY POLICIES

1. QUALITY is everyone's responsibility. Objections by anyone to the appearance, performance, or condition of any product make the part a "REJECT".

2. SAFETY is vital to the economic feasibility of staying in business. Unsafe acts will result in corrective counseling. Repeated unsafe acts may result in discharge.

RULES

1. This is a government specification job; while the material is in the hands of the Plant Engineer, it may be kneaded, rolled, and "worked". Once it is placed in the machine, it becomes either product or waste – there is no recycling or reuse of material.

2. The first color of Play-Doh is non-hazardous. The second and third colors of Play-Doh are both hazardous materials. Therefore, any mixing of colors will result in a hazardous waste. (See disclaimer)

3. Production must follow the sequence of customer orders.

INSTRUCTIONS

1. Set up materials to each facility, have employees decide on which position they will assume.

2. Once the Customer orders are received and understood, begin production.

3. Waste will be accumulated in the Storage Shed. Separate by color and type of waste. Waste will be either Quality Control Waste, Process Waste, or Clean up Waste. Quality Control Waste is defined as any product rejected by an employee. Process Waste is waste generated in the start up or end-of-run material. Each time production is completed, any material left in the machine will be pushed through and declared Process Waste. Clean up Waste is any material removed from the machine during the preparation for a color change.

4. Remember that you are in competition with the other companies, time is MONEY.

5. Once you have completed production of all parts, form a Quality Circle to discuss your wastes and the improvements you made, or could make during future production runs.

TRAINER'S TOP SECRET CHEAT SHEET

CUSTOMER ORDERS (Write on board or easel)

First: 3 First color H-beams, made the width of a Play-Doh can lid
Second: 3 Second color H-beams, made the width of a Play-Doh can lid
Last: 6 ½ pipes, third color, made two at a time, the length of a Play-Doh can w/o lid.

TRICKS

1. Before distributing the Play-Doh cans, place a piece of tape on the bottom of the blue cans with an expiration date of August 1997 (or any date in the past). The tape should not be noticeable to the employees. After the exercise is over this will become important.

2. After the facilities have all begun production; invite the Plant Managers to a FREE luncheon. After all, managers have joined you in the hall (out of hearing range) inform them of a special customer order. Once the first 2 sets of pipes are completed they are to reveal this EMERGENCY SPECIAL ORDER from your best customer for 3 first color H-beams. The employees cannot continue with the second set of pipes; they must clean up and begin immediate production of the new order. Timing and secrecy of this surprise special order is crucial. After informing the managers, they are to return to the production process and wait for the right time to initiate the special order.

POINTS TO COVER

1. Difference in amounts of Quality Control Waste between the colors.
   Usually gets smaller – Why? Reasons include: experience/learning curve, better procedures, and "practice makes perfect." Also: Cutting equipment can be improved. Pocketknife is a good replacement, or paper is even better. Demonstrates the advantages of process improvement.

2. a. Difference in amounts of Process Waste between the first and second colors H-beams.
   Usually gets smaller – Why? Reasons include: learning curves better batch size determinations for Play-Doh.

   b. What happens to the third color process waste?
   Special Order usually causes higher wastes; shows need for communication, inventory control, need for special prices (premiums) on special orders, especially since generated large amounts of hazardous waste to process a nonhazardous product.

3. Compare your cleanup waste piles. Cleanup waste is usually the same for all three colors. Can be lessened by: process equipment dedicated to each specific color, better scheduling that would allow longer runs, better machine design for ease of cleaning.

4. Have the Plant Engineer examine the bottom of the Play-Doh cans for additional information. Look at the expired cans! First in First out? Inventory control for shelf-life materials are essential. All second color products are now Quality Control Waste!

5. Open the floor for input from the Quality Circles of other reduction options.

PRODUCTS

	Q. C. Waste	Process Waste	Clean-up Waste
1st Color			
2nd Color			
3rd Color			